

AMENDMENT UNDER 37 C.F.R. § 1.116
U. S. Application No. 09/887, 535

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A video decoder having a digital image stabilization function, the decoder comprising:

a VLD for separating an image information and an additional information from an encoded bit stream;

a global motion computation unit for extracting a motion vector of a macro block unit from the additional information applied from the VLD, and computing a global motion vector using a local motion vector with respect to a background region in an additional information from the VLD;

~~a time-based integration unit for receiving a global motion vector from the global motion computation unit and time integrating the global motion vector based on a frame type; extracting a frame type from the additional information, judging whether the global motion vector is integrated according to the extracted frame type to generate a judgment, and integrating a global motion vector from the global motion computation unit based on the judgment; and~~

a global motion compensation unit for motion-compensating and stabilizing a recovery image using a global motion vector integrated by the time-based integration unit.

2. (currently amended): The decoder of claim 1, wherein said global motion computation unit ~~extracts a motion vector of the macro block unit from the additional information~~ classifies local motion vectors of the macro block unit contained in the additional

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information into a local motion vector with respect to the motion of the background region using a clustering technique, and detects a global motion vector through the classified local motion vectors of the background region.

3. (original): The decoder of claim 2, wherein said global motion computation unit includes:

a local motion vector detector for receiving an additional information from the VLD and extracting the local motion vectors by the macro block unit;

a motion separating processor for separating the local motion vectors extracted by the local motion vector detector and separating a local motion vector concerning the motion of the background region; and

a global motion vector detector for detecting one global motion vector based on the local motion vector of the background region separated by the motion separation processor.

4. (original): The decoder of claim 3, wherein said motion separation processor includes:

a similar motion estimation unit for separating the local motion vectors extracted from the local motion vector detector into a certain number of clusters; and

a background motion selector for selecting a cluster which has a motion of the background region among the clusters separated by the similar motion estimation unit.

5. (original): The decoder of claim 1, wherein said time-based integration unit includes:
a frame type extraction unit for extracting a frame type from the additional information from the VLD; and

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a global motion vector integration unit for integrating the global motion vector based on the frame type extracted by the frame type extraction processor.

6. (original): The decoder of claim 5, wherein said time-based integration unit directly integrates the global motion vector in the case that the frame type is “I” and “P” and integrates the global motion vector when correcting the B-frame in the case of B-frame.

7. (currently amended): A digital image stabilization method using a video decoder, comprising the steps of:

a separation step for receiving an encoded bit stream and separating into an image information and an additional information;

a computation step for extracting a motion vector of a macro block unit from the additional information applied from the VLD, and computing a global motion vector using a local motion vector concerning the motion of a background region in the additional information separated in the separation step;

~~an integration step for receiving the computed global motion vector and time integrating the received global motion vector based on the frame type extracting a frame type from the additional information, judging whether the global motion vector is integrated according to the extracted frame type to generate a judgment, and integrating a global motion vector from the global motion computation unit based on the judgment; and~~

a stabilization step for motion-compensating and stabilizing a recovery image using the global motion vector integrated in the integration step.

8. (currently amended): The method of claim 7, wherein said computation step includes:

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a first step for receiving the additional information and ~~extracting the local motion vector based on the macro block unit classifying local motion vectors of the macro block unit contained in the additional information into a local motion vector with respect to the motion of the background region using a clustering technique;~~

a second step for separating the local motion vector ~~extracted classified~~ in the first step and separating the local motion vector concerning the motion of the background region; and

a third step for detecting one global motion vector based on the local motion vector of the background region separated in the second step.

9. (original): The method of claim 8, wherein said second step comprises the steps of:

2a for separating the local motion vector extracted in the first step into a certain number of the clusters; and

2b for selecting a certain cluster which has a motion of the background region among the clusters separated in the step 2a.

10. (original): The method of claim 7, wherein said integration step includes:

a first step for extracting a frame type from the additional information; and

a second step for integrating the global motion vector based on the frame type extracted in the first step.

11. (original): The method of claim 10, wherein in said integration step, the global motion vector is directly integrated in the case that the frame type is "I" and "P", and the global motion vector is integrated when correcting the B-frame in the case of the B-frame.